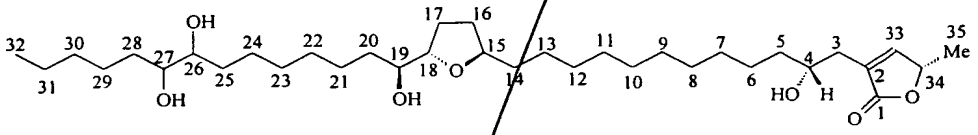
What is claimed is

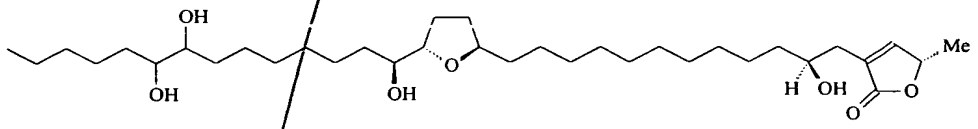
1. Annonaceous acetogenins substantially pure compounds having the structures a-g.

a. muricin A having formula as:



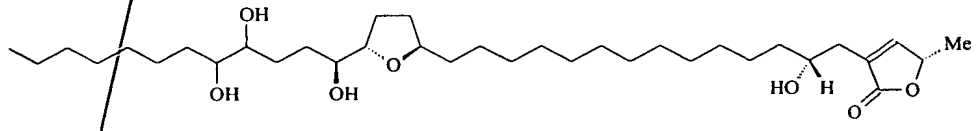
wherein the muricin A having an α,β-unsaturated γ-lactone with a hydroxyl group at C-4 position, a mono-THF ring placed between C-15 and C-18 with one flanking hydroxyl in a threo conformation, two methylene groups of the mono-THF ring corresponding to trans conformation, two hydroxyl groups at C-26 and C-27 as vicinal diol assigned as threo based, and the stereochemistry at C-34 on the γ-lactone fragment performed in (S)-configuration.

b. muricin B having formula as:



wherein the muricin B having an α,β-unsaturated γ-lactone with a hydroxyl group at C-4 position, a mono-THF ring placed between C-15 and C-18 with one flanking hydroxyl in a trans/threo conformation, two methylene groups of the mono-THF ring corresponding to trans conformation, two hydroxyl groups at C-26 and C-27 as vicinal diol assigned as threo based, and the stereochemistry at C-34 on the γ-lactone fragment performed in (S)-configuration.

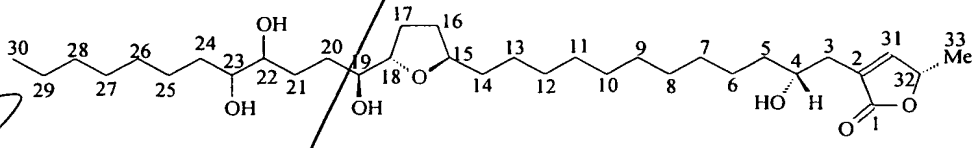
c. muricin C having formula:



wherein the muricin C having an α,β-unsaturated γ-lactone with a hydroxyl

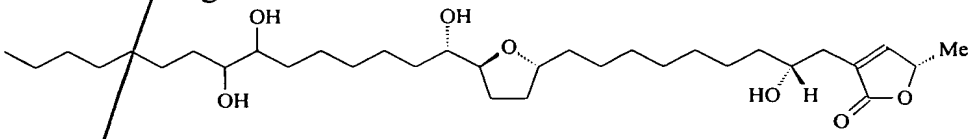
group at C-4 position, a mono-THF ring placed between C-17 and C-20 with one flanking hydroxyl in trans/threo or threo/trans conformation, two hydroxyl groups at C-24 and C-25 as vicinal diol assigned as threo based, and the stereochemistry at C-34 on the γ-lactone fragment performed in (S)-configuration.

d. muricin D having formula:



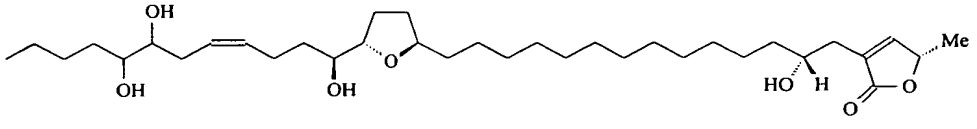
wherein the muricin D having an α,β-unsaturated γ-lactone with a hydroxyl group at C-4 position, a mono-THF ring placed between C-15 and C-18 with one flanking hydroxyl in threo/trans conformation, two hydroxyl groups at C-22 and C-23 as vicinal diol assigned as threo based.

e. muricin E having formula:



wherein the muricin E having an α,β-unsaturated γ-lactone with a hydroxyl group at C-4 position, a mono-THF ring placed between C-12 and C-15 with one flanking hydroxyl in threo/trans conformation, two hydroxyl groups at C-22 and C-23 as vicinal diol assigned as threo based.

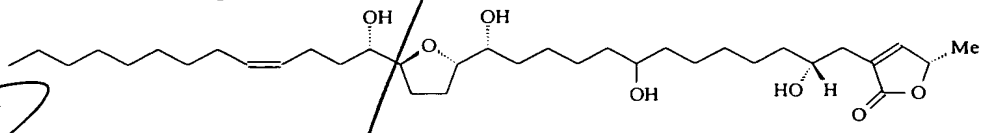
f. muricin F having formula:



wherein the muricin F having an α,β-unsaturated γ-lactone with a hydroxyl group at C-4 position, a mono-THF ring placed between C-17 and C-20 with

one flanking hydroxyl in threo/trans conformation, two hydroxyl groups at C-27 and C-28 as vicinal diol assigned as threo based, and a double bond determined at C-24/C-25.

g. muricin G having formula:



wherein the muricin G having an α,β-unsaturated γ-lactone with a hydroxyl group at C-4 position, a mono-THF ring placed between C-16 and C-19 with one flanking hydroxyl in threo/trans/threo conformation, one hydroxyl groups formed at C-10, a double bond determined at C-23/C-24, and the stereochemistry at C-34 on the γ-lactone fragment performed in (S)-configuration.

2. A method for substantially purified extract of claim 1 from the species *Annona muricata*, wherein the method comprising:

extracting *Annona muricata* seeds repeatedly with MeOH at room temperature;

evaporating and partitioning the combined MeOH extracts to yield $CHCl_3$ and aqueous extracts;

further separating the $CHCl_3$ layer into ten fractions by column chromatography on Si gel with gradient system of *n*-hexane-$CHCl_3$ and $CHCl_3$-MeOH;

combining the eighth and ninth fractions together and then further separating into ten sub-fractions by column chromatography;

isolating and purifying the Annonaceous acetogenins compounds from the ten sub-fractions.

3. The method as claimed in claim 2 for substantially purified extract of claim 1

from the species *Annona muricata*, in which the muricin A (1), muricin B (2), muricin C (3), and muricin F (6) are isolated and purified from the seventh sub-fraction by a preparative reversed-phase method.

4. The method as claimed in claim 2 for substantially purified extract of claim 1 from the species *Annona muricata*, in which the muricin D (4), muricin E (5), and muricin G (7) are isolated and purified from the eighth sub-fraction by a preparative reversed-phase method.

5. An anti-tumor composition selectively comprising an amount of substantially pure muricins of claim 1, wherein the muricins are effective and acted as an anti-tumor agent and selectively combined with pharmaceutically acceptable salt, ester, and carrier in the anti-tumor composition.

6. The annonaceous acetogenins compounds as claimed in claim 1, wherein the substantially pure muricins are selectively used for the preparation of a pharmaceutical composition for the treatment of a patient having a tumor.

7. The anti-tumor composition as claimed in claim 5, wherein the anti-tumor composition is used for pharmaceutically treating a patient having hepatoma cancer.

8. A method of treating a patient having a tumor, wherein said method comprising administering an effective amount of a pharmaceutical composition comprising muricins of claim 1 to a patient afflicted with cancer.

9. A method for treating hepatoma cancer, said method comprising administering to a patient afflicted with hepatoma cancer an effective amount of a pharmaceutical composition comprising a substantially pure bioactive compound selected from the group consisting of muricins of claim 1 and pharmaceutically acceptable salt, ester, or carrier.

add A'

add B4